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Floor Carpet Installing System

—40098

Patent Application

of

AXEL SCHULTE

for

FLOOR CARPET INSTALLING SYSTEM

Field Of The Invention

The present invention relates to a floor carpet ~~installing~~installation system with a carpet ~~which forms~~forming the usable surface with its ~~front~~nap side, a ~~non-looped~~loopless material ~~which is cemented to the~~glued together with the floor surface, ~~and as well as~~ an anchoring means which has ~~projecting~~protruding interlocking elements on both sides ~~and which on the one hand~~. The interlocking elements interlock with the ~~reverse~~backside of the carpet ~~which is formed from non-looped~~of a loopless material ~~and which faces away from the pile~~opposite the nap side on one side and on the other hand, and interlock with the ~~non-looped~~loopless material on the floor surface on its opposite side.

Background Of The Invention

A floor carpet installation system ~~of~~ is disclosed in FR 2 282 999

~~A. In this type is already known from document FR 2 282 999 A. In the known~~
~~conventional system there are,~~ strips which are provided and aligned on the
carpet edges as anchoring means ~~to the carpet edges and which.~~ Both sides of the
strips have ~~projecting~~ protruding interlocking elements ~~on both sides in the form of~~
~~bristles which are inclined toward~~ relative to the carpet plane of the carpet, these.
These bristles being are inclined respectively on one side and on the other side
~~in~~ in turn in opposite directions ~~opposite from one another.~~ This ~~opposite~~ opposing
inclination of the bristles upon, with the interlocking with the loopless backside
of the carpet and with the non-looped reverse side of the carpet and the non-
looped loopless material attached of the carpet fastened to the floor, is intended to
prevent displacement sliding along the carpet plane of the carpet. But it has been found
~~that.~~ However, this type of anchoring does not ensure a reliable enough bond. In this
way, during use the formation of bubbles and ripples can occur, in particular guarantee a
sufficiently secure connection. Thus, it can lead to the formation of buckling
and displacement during use. Especially under ~~higher~~ greater stresses, for
example by ~~moving~~ sliding of heavy pieces of furniture, ~~there is the danger of~~
~~major~~ great damage. can exist.

Summary Of The ~~object~~ Invention

Objects of the present invention is are to devise provide a floor carpet installation system which is accordingly characterized by comparably improved characteristics of properties of use.

~~— In a~~ With the floor carpet installation system of the type mentioned in the foregoing, this object is , these objects are attained as claimed in the by the present invention in that the anchoring means is a microfastener element with interlocking elements in the form of stalks with end side thickened areas, and that the interlocking elements on the two sides of the _adhesive fastener element have different shapes and/or dimension and/or mutual distances from one another closing

~~— The anchoring as claimed in the invention by means of double sided microfastener with an adhesive fastener element, which has interlocking elements located on both sides in the form of stalks with end side thickened areas, which interlock on each side with non-looped material, results in several advantages.~~ element is provided as the anchoring means. The anchoring means has interlocking elements configured in the form of fingers with thicknesses at their ends. The interlocking elements include different shapes and/or dimensions and/or different reciprocal distances from one another on both sides of the adhesive closing element.

The anchoring provided according to the present invention by a double-sided micro-adhesive closing element having interlocking elements arranged on

both sides in the form of fingers with thicknesses at their ends, interlocks on each side in turn with a loopless material and leads to several advantages. On the one hand, this type of interlocking yields ~~an especially reliable connection with regard to~~ a particularly secure connection against the relative movements along the ~~carpet plane of the carpet.~~ On the other hand, ~~because~~ since in this arrangement the adhesive ~~fastener~~ closing element is not ~~cemented~~ adhered directly ~~to~~ with the floor surface, but ~~interlocks with the~~ rather is interlocked with a likewise ~~non-looped~~ loopless material ~~which is attached~~ fastened to the floor surface, the present invention avoids the danger ~~is avoided~~ that ~~shrinkage or ripples, which occur when the floor surface ages~~ displacements occurring following the hardening or sets, aging process of the finish of the floor could lead to a detachment of the anchoring, ~~because the non-looped.~~

The loopless material ~~which is on the floor surface~~ forms a compensation layer ~~with~~ having a certain ~~compliance~~ flexibility to compensate for the shrinkage or displacements. In addition, this layer ~~which is attached~~ fixed to the floor surface also ~~acts to dampen the noise of walking~~ causes footstep-sound-absorption.

———Another advantage is that ~~by choosing the dimensions, the geometry and/or the choice~~ results from the selection of the dimensions and the shape and/or selection of the number of interlocking elements per surface unit. The degree of area, ~~the interlocking action~~ effect on the ~~two~~ both sides of the adhesive

~~fastener~~closing element can be ~~appropriately selected~~in a suitable manner by
~~such selection~~. Thus, for example, the adhesive action~~effect~~ on the bottom side
of the adhesive ~~fastener~~closing element ~~which face~~turned toward the floor
~~surface~~finish can be selected to be ~~stronger~~more powerful than the adhesive action
~~relative to the non-looped material on the reverse side of the carpet. When the carpet is lifted,~~
~~which is possible in interlocking with the non-looped~~effect against the loopless material
on the ~~reverse~~backside of the carpet. With lifting of the carpet, which with
interlocking with loopless material of the carpet backside is possible by
overcoming the adhesive force therebetween, the adhesive ~~fastener~~closing
element in this case remains interlocked ~~to~~with the floor-side ~~non-looped~~loopless
material, so that ~~after~~following lifting of the carpet ~~is lifted~~re-a renewed
installation is possible without ~~additional measures~~further processes.

———~~For the installation system as claimed in the invention a microfastener element is suited~~
~~which is configured similarly to the element known from DE 196 46 318 A1, but differs from it~~
~~in that the corresponding interlocking elements are molded not only on the front side, but also on~~
~~the reverse side of the backing.~~

———~~Depending on the product base~~A micro-adhesive closing element
configured similar to that element is disclosed in DE 196 46 318 A1 and is
suitable for the installation system according to the present invention.
However, that micro-adhesive closing element nonetheless differs from the

element of the present invention in that the front side and the backside of the carrier of the present invention only are constructed with corresponding interlocking elements.

According to the make-up of the carpet which is to be installed, i.e., depending on the n other words according to the structure of the reverse side, a microfastener can be usedbackside, a micro-adhesive

closing with the a thickness of the backingcarrier of the interlocking elements
~~from of~~ 0.1 to 0.5 mm and with 20 to 600 interlocking elements per cm² can be
used on each side.

~~——The thickened areasthicknesses of the stalksfingers of the interlocking~~
~~elements can have the shape of mushroom heads or plate-shaped heads, the.~~
The heads on their top side are preferably being provided with concave recesses. A
~~processdepressions on the top sides. One method for the especially simple~~
~~productionmanufacture of microfastener-adhesive closing elements with thesesuch~~
~~interlocking elements in a one-sided arrangement is proposedsuggested in the~~
~~German Patent Applicationpatent application 198 28 856.5.~~

~~——When usingWith use of interlocking elements which have recesseshaving~~
~~depressions on the top sidetops of the heads, the recessesdepressions of the heads~~
~~can be provided with an adhesive which effects additional bonding to the reverse~~
~~providing an additional connection with the backside of the carpet and/or the~~
~~floor-side material. The adhesive can be applied, for example, by spread~~
~~coatingscraping on.~~

~~——Textile materials in the form of felts and nonwovens as well as or~~
~~fleeces, or else loose leno weave or smoothflat knit fabrics and, as well as non-~~

woven textiles (~~nonwoven materials~~) can be provided as the reverse backside of the carpet and as the ~~non-looped~~ loopless material which is ~~cemented to~~ glued with the floor.

~~—— The invention will be described in greater detail below with the aid of the drawings in which:~~

~~—— FIG.~~ Other objects, advantages and salient features of the present invention will become apparent from the following detailed description,

which, taken in conjunction with the annexed drawings, discloses a preferred embodiment of the present invention.

Brief Description Of The Drawings

Referring to the drawings which form a part of this disclosure:

Fig. 1 — shows a schematically is a diagrammatically simplified and broken away, partial side elevational view in section of the components of the floor carpet installation system as claimed in the according to the present invention;

— FIG. Fig. 2 — shows is a perspective, highly greatly enlarged view of a double-sided microfastener element, a single interlocking element being shown even more enlarged and cutaway, adhesive closing element of the floor carpet system of Fig. 1, with one individual interlocking element illustrated in an enlarged side elevational view in section; and

— FIG. 3 shows a broken away top view drawn in approximately natural size of the non-looped reverse side of the carpet from FIG. Fig. 3 is a partial plan view in substantially actual scale of a loopless backside of the carpet of Fig. 1.

FIG. Detailed Description Of The Invention

Fig. 1 shows in is an enlarged, diagrammatic simplified schematic a

~~representation in cross section of a floor carpet with pile~~nap elements 1 of the
~~conventional~~traditional type, ~~which.~~ Nap elements 1 extend ~~upward~~ from a
~~connecting~~connection layer 3, and ~~which~~ form the pilenap side of the carpet which
~~is used~~serving as ~~the~~its usable surface. The reverse backside 5 ~~facing away from,~~
opposite the pilenap side, is formed by a ~~non-looped~~loopless material. ~~Materials can~~
~~be used for~~ For this purpose, ~~which impart to the~~ materials could be used lending
the carpet structure a ~~specific~~ stiffness

a certain rigidity, directional alignment stability and cut/tear resistance. For this purpose, they can be felts. Therefore, felt or nonwovens which acquire fleece could be used, obtaining their mechanical coherence composition by the tufting processes method, and are cemented/adhered to the connecting/connection layer 3 of the carpet. Also, loose leno weave or smooth right/left knits/flat knit and other so-called non-woven materials are also suitable for this purpose.

FIG. 2 shows a section of a strip of a microfastener-adhesive closing element 7, similar to the one shown that disclosed in DE 196 46 318 A1. The thermoplastic strip (for example, polyolefins/polyolefines or blends of polyamides are possible) strip) is formed in the gap between an upper and a lower forming tool forms a film/top and bottom shaping tools, and forms a foil-like backing/carrier 9 with stalks/fingers 11 which project/protruding from its top side and bottom-side. The stalks, respectively. Fingers 11, which project/protrude from the top side of the backing/carrier 9 and which, have thickened ends which

Claims

Floor-forming mushroom-shaped or plate-shaped heads 13, and come into interlocking engagement with the loopless material of backside 5 of carpet installing system with a carpet which forms the usable surface with its pile side (1), non-looped material (21), which is cemented to the floor surface (25), and an anchoring means (7) which has projecting interlocking elements (11) on both sides and which on the one hand interlock with the reverse side (5) of the carpet which is formed from non-looped material and which faces away from the pile side (1) and on the other hand with the non-looped material (21) on the floor surface (25), characterized in that the anchoring means is a microfastener element (7) with interlocking elements made in the form of stalks (11) with end side thickened areas (13), and in that the interlocking elements (11, 13) on the two sides of the adhesive fastener element (7) have different shapes and/or dimension and/or mutual distances from one another. The fingers directly engage the carpet backside. According to the mechanical construction and quality of the structure of backside 5 of the relevant carpet, the arrangement of fingers 11 has a packing density of approximately 20 to 600 fingers 11 per cm², with a thickness of carrier 9 of approximately 0.1 to 0.5 mm. Other packing densities and/or thicknesses of carrier 9 can of course be used according to the special circumstances. Such fingers are also on the bottom of carrier 9.

2. ~~The carpet installation system as claimed in claim 1, wherein the thickened areas of the stalks (11) of the interlocking elements have the shape of mushroom heads or plate-shaped heads (13).~~
3. ~~The carpet installation system as claimed in claim 2, wherein the heads (13) which form the thickened areas are provided on their top side with concave depressions (15).~~
4. ~~The carpet installation system as claimed in claim 3, wherein the depressions (15) of the heads (13) on at least one side of the adhesive fastener element (7) are provided with an adhesive (17) which effects an additional bond to the reverse side (5) of the carpet and/or the material (21) on the floor surface (25).~~
5. ~~The carpet installation system as claimed in claim 4, wherein there is an acrylate-based adhesive (17).~~
6. ~~The carpet installation system as claimed in one of claims 1 to 5, wherein felts or nonwovens are provided as the non-looped textile material (5, 21).~~
7. ~~The carpet installation system as claimed in one of claims 1 to 5, wherein loose leno or smooth knit fabrics are provided as non-looped textile material (5, 21).~~
8. ~~The carpet installation system as claimed in one of claims 1 to 5, wherein the non-woven textiles such as stitch-bonded materials, needled felt, or tufting are provided as non-looped textile material (5, 21).~~

9. ~~The carpet installation system as claimed in one of claims 6 to 8, wherein at least the non-looped material (21) provided on the floor surface (25) has properties of damping the noise of walking.~~

As can be recognized, particularly from the sectional representation shown greatly enlarged in Fig. 2, the thickened heads 13 of fingers 11 are formed into mushroom- or plate-shapes with concave arcuate tops. Within the edge of each head 13, a depression 15 is formed.

With the example shown in Fig. 2, the depression 15 of head 13 is filled with an adhesive 17. This can be applied by spreading on or scraping on, in order to produce an additional connection following the interlocking engagement with backside 5 of the relevant carpet or the floor loopless material. Adhesives on acrylate base can be used as the adhesive material, for example, 2-ethyl hexyl acrylate or butyl acrylate, preferably in different selected mixture ratios, in order to vary the plasticizing, plasticity and adhesive power as desired and as required.

With wall-to-wall installation of carpets, adhesive closings 7 can be provided in the form of long strips or bands. With installation of the carpet in tile-like or flagstone-like form, shorter, strip sections adapted in a suitable manner to the individual tile parts can be provided.

While one embodiment has been chosen to illustrate the invention, it will be understood by those skilled in the art that various

changes and modifications can be made therein without departing from
the scope of the invention as defined in the appended claims.

WHAT IS CLAIMED IS:

FLOOR CARPET INSTALLING SYSTEM

Abstract Of The Disclosure

A system for installing floor carpets, includes a carpet nap side having forming the useful surface and an anchor that can be fixed to the floor surface. The anchor has protuberant interlocking elements that interlock with the backside of the carpet opposite the nap side. The backside of the carpet is formed by a material having no loops. The anchor includes a loopless material glued to the floor surface. A micro-adhesive closure element having interlocking elements on both sides in the form of fingers with thickenings on the ends, interlock with the loopless backside of the carpet and with the loopless material on the floor surface.